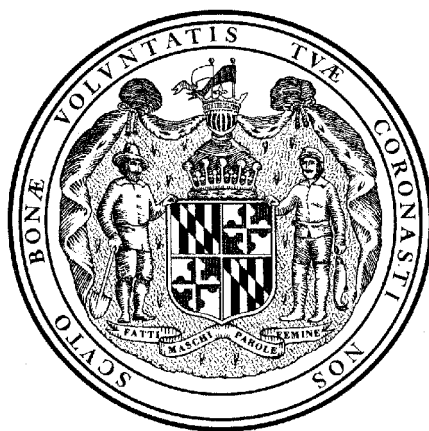


State of Maryland  
DEPARTMENT OF NATURAL RESOURCES  
MARYLAND GEOLOGICAL SURVEY  
Emery T. Cleaves, Director

# Maryland Geological Survey

# List of Publications



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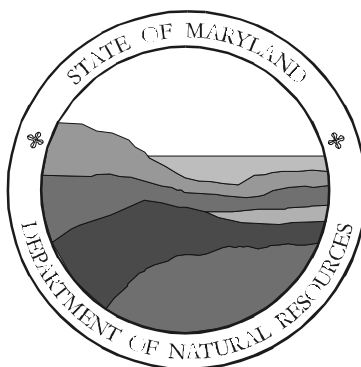
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## MARYLAND GEOLOGICAL SURVEY

Since the Maryland Geological Survey was created in 1896, it has been basically a scientific-investigative organization. It is charged with the many-faceted role of investigating the earth resources of Maryland through the application of the various disciplines within the general field of earth science. Thus, its primary mission concerns geologic studies, including geologic mapping, environmental geology, geology of mineral resources, water-resources investigations, coastal and estuarine geology, and topographic and geophysical mapping.

The Maryland Geological Survey has been an agency within the Department of Natural Resources since 1969. With a reorganization of DNR in 1995, the Survey is now a division of DNR's Resource Assessment Service.

The Survey carries out its mission through three scientific programs under the general supervision of the General Direction Program. The three scientific programs are Hydrogeology and Hydrology, Environmental Geology and Mineral Resources, and Coastal and Estuarine Geology. The Hydrogeology and Hydrology Program, in cooperation with the U.S. Geological Survey, is responsible for the maintenance of a statewide water-data network and the investigation of hydrologic and geologic characteristics of Maryland water resources. The Environmental Geology and Mineral Resources Program has two broad areas of interest. The main focus encompasses geologic mapping and related geological studies, mapping and assessment of the State's mineral resources, topographic map compilation and periodic revision, environmental geology applications, and the general dissemination of earth science information about Maryland. Another Program activity involves the Maryland Earth Science Information Center, whose focus is geologic education. The Coastal and Estuarine Geology Program has the responsibility for basic and applied geological investigations in the coastal zone. The overall objectives are to determine the processes altering the shorelines of Maryland and to characterize the physical and chemical aspects of the recent sediments of Chesapeake Bay.

Cooperative programs have been undertaken with the U.S. Geological Survey in geologic and topographic mapping and in water-resources investigations.

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## MAPS

### CHESAPEAKE BAY EARTH SCIENCE ATLASES

Scale 1:40,000 (1 inch equals approximately 0.6 mile). Size 35x49 inches (bound). Rolled maps only. Add \$2.00 per atlas for mailing tube.

**CBA 1 & 2. (combined). No. 1. HEAD OF CHESAPEAKE BAY.** 6 maps: 1. Sampling locations; 2. Sulfur content; 3. Sediment distribution; 4. Water content; 5. Carbon content (organic and total); 6. Patterns of erosion and deposition. **No. 2. APPROACHES TO BALTIMORE HARBOR.** 5 maps: 1. Sampling locations and sulfur content; 2. Sediment distribution; 3. Water content; 4. Carbon content (organic and total); 5. Patterns of erosion and deposition. Cuthbertson, R.H., ed., 1987. . . . . \$20.00

**CBA 3. EASTERN BAY AND SOUTH RIVER.** 7 maps: 1. Sampling locations; 2. Sediment distribution; 3. Water content; 4. Total carbon content; 5. Organic content; 6. Sulfur content; 7. Sedimentation rates. Kerhin, R.T., ed., 1980. . . . . Out of Print

**CBA 4. CHOPTANK RIVER AND HERRING BAY.** 5 maps: 1. Sampling locations and sulfur content; 2. Sediment distribution; 3. Water content; 4. Carbon content (organic and total); 5. Patterns of erosion and deposition. Halka, J.P., ed., 1982. . \$11.00

**CBA 5. PATUXENT RIVER AND VICINITY.** 5 maps: 1. Sampling locations and sulfur content; 2. Sediment distribution; 3. Water content; 4. Carbon content (organic and total); 5. Patterns of erosion and deposition. Halka, J.P. and Wells, D.V., eds., 1982. . \$21.00

### CITY MAPS

**BALTIMORE-WASHINGTON ROAD MAP.** Scale 1:125,000 (1 inch to approximately 2 miles). 1918. . . . . Out of Print

**CITY OF BALTIMORE.** Scale 1:12,000 (1 inch to 1,000 feet). In sheets, each 20x26.5 inches, representing an area of 20 square miles. Northwest, 1912; Northeast, 1913; Southeast, 1914; Southwest, 1915; Sparrows Point, 1917; Dundalk, 1918; Curtis Bay, 1919. . . . . Out of Print

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**CITY OF BALTIMORE.** Scale 1:24,000 (1 inch to 2,000 feet). One sheet 28x35 inches. Shows configuration of underlying rock floor. 1935. . . . . \$1.00

**CITY OF BALTIMORE.** Scale 1:24,000 (1 inch to 2,000 feet). One sheet 28x35 inches. Shows the amount of overburden covering the underlying rocks. 1935. . . . . \$1.00

**CITY OF HAGERSTOWN.** Scale 1:12,000 (1 inch to 1,000 feet). One sheet 29x31 inches. 1927. . . . . Out of Print

### COUNTY ATLAS

**CA. 1. ANNE ARUNDEL COUNTY: GEOLOGY, MINERAL RESOURCES, LAND MODIFICATION, AND SHORELINE CONDITIONS.** Scale 1:62,500 (approximately 1 inch to the mile). 4 maps: 1. Geology; 2. Mineral resources and mined land inventory; 3. Land modifications; 4. Shoreline conditions. Glaser, J.D., Kuff, K.R., Slaughter, T.H., Kerhin, R.T., McMullan, B.G., Cocoros, G. and Vanko, D., 1976. . . . . Out of Print

### COUNTY TOPOGRAPHIC AND GEOLOGIC MAPS

- All are at a scale of 1:62,500, or approximately 1 inch to the mile. The full-color topographic maps show the election districts. Geologic maps are on the topographic base.
- Most maps are available either folded or rolled. Folded only are marked with "F." For rolled maps, add \$2.00 for mailing tube. (Several maps can fit in one mailing tube.)
- A new blueline geologic map of Caroline is available; maps of Prince George's and Allegany Counties are in progress.

	Topographic \$6.00	Geologic \$7.50
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Baltimore County (incl. Baltimore City) . . . . .	1985 F	1976 <sup>1</sup>
Calvert County . . . . .	1980	1995 <sup>2</sup>
Caroline County . . . . .	1984	1998 <sup>2</sup>
Carroll County . . . . .	1990	1928 OP
Cecil County . . . . .	1997	1986 <sup>3</sup>
Charles County . . . . .	1981	1989
Dorchester County . . . . .	1986	1986
Frederick County . . . . .	1982 OP	1938 OP
Garrett County . . . . .	1987	1953 OP
Harford County . . . . .	1988	1968
Howard County . . . . .	1974	1993 <sup>4</sup>
Kent County . . . . .	1988	1915 OP
Montgomery County . . . . .	1973	1953 OP
Prince George's County . . . . .	1987	1951 OP
Queen Anne's County . . . . .	1986	1915 OP
St. Mary's County . . . . .	1990	1989
Somerset County . . . . .	1996	1984
Talbot County . . . . .	1977	1986
Washington County . . . . .	1992	1978 <sup>5</sup>
Wicomico County . . . . .	1983	1979
Worcester County . . . . .	1984 F	1978

- OP Out of print                      F Folded only
- 1 Out of print, but is available as a blueline copy, \$3.00.
- 2 Geologic map available only as a blueline map, \$3.00.
- 3 Geologic map also with Bull. 37.
- 4 Geologic map also with Bull. 38.
- 5 Geologic map also with Bull. 36.

## MINERAL RESOURCES INVESTIGATIONS

### COUNTY MAPS

**MINERAL RESOURCES AND MINED LAND INVENTORY OF ANNE ARUNDEL COUNTY, MARYLAND.** Scale 1:62,500. Kuff, K.R., 1976. (Available only as part of County Atlas No. 1; see p. 4) ..... Out of Print

**MINED LAND INVENTORY MAP OF BALTIMORE COUNTY AND BALTIMORE CITY.** Scale 1:62,500. Kuff, K.R., 1975. .... \$5.00

**SAND AND GRAVEL RESOURCES AND MINED LAND INVENTORY OF CALVERT COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1986. (blueprint print) ..... \$3.00

**MINERAL RESOURCES OF CAROLINE COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1990. (blueprint print) ..... \$3.00

**MINERAL RESOURCES AND MINED LAND INVENTORY MAP OF CARROLL COUNTY.** Scale 1:62,500. Kuff, K.R., 1982. . \$6.00

**SAND AND GRAVEL RESOURCES AND MINED LAND INVENTORY OF CHARLES COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1985. (blueprint print) ..... \$3.00

**MINERAL RESOURCES OF DORCHESTER COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1994. (blueprint print) .. \$3.00

**MINERAL RESOURCES OF KENT COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1995. (blueprint print) ..... \$3.00

**MINERAL RESOURCES AND MINED LAND INVENTORY MAP OF PRINCE GEORGE'S COUNTY.** Scale 1:62,500. Kuff, K.R., 1980. .... \$5.00

**MINERAL RESOURCES OF QUEEN ANNE'S COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1995. (blueprint print) .. \$3.00

**SAND AND GRAVEL RESOURCES AND MINED LAND INVENTORY OF ST. MARY'S COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1986. (blueprint print) ..... \$3.00

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**MINERAL RESOURCES OF TALBOT COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1994. (blueprint print) ..... \$3.00

**MINERAL RESOURCES OF WICOMICO COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1990. (blueprint print) ..... \$3.00

**MINERAL RESOURCES OF WORCESTER COUNTY, MARYLAND.** Scale 1:62,500. Brooks, J.R., 1990. (blueprint print) .. \$3.00

**LANDS FOR POTENTIAL MINERAL RESOURCE DEVELOPMENT.** Counties available: Allegany (excluding coal), 1983; Anne Arundel, 1979; Baltimore County and City, 1979; Carroll, 1981; Cecil, 1979; Frederick, 1983; Garrett (excluding coal), 1983; Harford, 1979; Howard, 1979; Montgomery, 1983; Prince George's, 1981; Washington, 1983. 5 pages + map (blueprint print). Kuff, K.R. Each county map and text ..... \$3.00

## MINERAL RESOURCE INVESTIGATIONS (continued)

### MINERAL RESOURCES QUADRANGLE MAPS

**MRQ No. 1. MINERAL RESOURCES MAP OF THE NEW WINDSOR QUADRANGLE.** Scale 1:24,000. Kuff, K.R., 1981. (blueprint print) ..... \$3.00

**MRQ No. 2. MINERAL RESOURCES MAP OF THE UNION BRIDGE QUADRANGLE.** Scale 1:24,000. Kuff, K.R., 1981. (blueprint print) ..... \$3.00

**MRQ No. 3. MINERAL RESOURCES MAP OF THE FINKSBURG AND SYKESVILLE QUADRANGLES.** Scale 1:24,000. Kuff, K.R., 1981. (blueprint print) ..... \$3.00

### OPEN-FILE COAL MAPS

**OFM 98-03-1. EXTENT AND STRUCTURE CONTOUR MAP OF THE PITTSBURG COAL BED IN THE POTOMAC AND GEORGES CREEK BASINS, ALLEGANY AND GARRETT COUNTIES, MARYLAND.** Scale 1:100,000. Brezinski, D.K., 1998. (blueprint print) ..... \$3.00

**OFM 98-03-2. EXTENT AND STRUCTURE CONTOUR MAP OF THE UPPER FREEPORT COAL BED IN THE POTOMAC AND GEORGES CREEK BASINS, ALLEGANY AND GARRETT COUNTIES, MARYLAND.** Scale 1:100,000. Brezinski, D.K., 1998. (blueprint print) ..... \$3.00

### MISCELLANEOUS MAPS

**GEOLOGIC MAP OF FREDERICK VALLEY, MARYLAND.** Scale 1:62,500. Reinhardt, J., 1974. .... \$3.00

**WATER USE IN MARYLAND.** 1 sheet, 28x34 inches. Maps with text. Wheeler, J.C., 1983. .... \$5.00

**GEOLOGIC MAP OF THE WESTERN BLUE RIDGE, FREDERICK AND WASHINGTON COUNTIES, MARYLAND.** Scale 1:62,500. Brezinski, D.K., 1992. (also included in Report of Investigations 55; see p. 22) ..... \$7.00

**BATHYMETRY OF THE CHESAPEAKE BAY.** Scale 1:224,700. Virginia Institute of Marine Sciences, 1977. .... Out of Print

## MAPS

### ORTHOPHOTO QUADRANGLES

**ORTHOPHOTO QUARTER-QUADRANGLES (3.75-MINUTE SERIES).** These are ortho-corrected (parallax-free) photographic images (either digital or analog reproduction) of "quarter quads"—i.e., one-fourth of a standard 7.5-minute quadrangle. Scale 1:12,000 (1 inch equals 1,000 feet); size approximately 24 inches by 31 inches. Prepared by PhotoScience, Inc., Rockville, MD, for the Maryland Department of Natural Resources - Water Resources Administration. Incomplete coverage of the state. Contact the MGS Publications Office at (410) 554-5505 for information concerning coverage for a particular area of interest. Dates vary; generally 1989-1993. Blue-line copies only. . . . . \$4.00

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Media:

- CD-ROM (600 megabytes): each \$20
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### QUADRANGLE ATLASES

**QA 1. BOWIE QUADRANGLE: GEOLOGIC AND ENVIRONMENTAL ATLAS.** 5 maps: 1. Geologic; 2. Mineral resources; 3. Ground-water resources; 4. Construction conditions; 5. Septic-tank constraints. Glaser, J.D. and Hansen, H.J., 1973. . . . . \$5.00

**QA 2. TOWSON QUADRANGLE: GEOLOGIC AND ENVIRONMENTAL ATLAS.** 5 maps: 1. Geologic; 2. Landform; 3. Thickness of overburden; 4. Geologic factors affecting land modification; 5. Mineral resources and mined land inventory. Cleaves, E.T., Crowley, W.P., and Kuff, K.R., 1974. . . . . \$15.00

**QA 3. COCKEYSVILLE QUADRANGLE: GEOLOGY, HYDROLOGY, AND MINERAL RESOURCES.** 8 maps: 1. Geologic; 2. Estimated thickness of overburden; 3. Geologic factors affecting land modification; 4. Mineral resources and mined land inventory; 5. Location of wells, springs, and test holes; 6. Depth to the water table; 7. Availability of ground water; 8. Geohydrologic conditions pertaining to domestic underground liquid-waste disposal. Otton, E.G., Cleaves, E.T., Crowley, W.P., Kuff, K.R., and Reinhardt, J., 1975. (Geologic map also available separately; see p. 8.) . . . \$10.00

**QA 4. WHITE MARSH QUADRANGLE: GEOLOGY, HYDROLOGY, AND MINERAL RESOURCES.** 3 maps: 1. Geologic; 2. Physiography; 3. Mineral resources. Cleaves, E.T., Kuff, K.R., Crowley, W.P., and Reinhardt, J., 1979. (Geologic map also available separately; see p. 8.) . . . . . \$14.50

Five other maps for this atlas are available only for inspection at MGS: 4. Overburden; 5. Land modification; 6. Depth to the water table and location of wells, springs, and test holes; 7. Availability of ground water; 8. Constraints on installation of septic systems. Cleaves, E.T. and Otton, E.G., 1979.

**QA 5. JARRETTSVILLE QUADRANGLE HYDROGEOLOGY.** 4 maps: 1. Depth to water table; 2. Slope of the land surface; 3. Ground-water availability; 4. Constraints on installation of septic systems. Nutter, L.J., 1977. . . . . \$5.00

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**QA 7. HYDROGEOLOGIC ATLAS, REISTERSTOWN QUADRANGLE, BALTIMORE COUNTY, MARYLAND.** 6 maps: 1. Geologic, 1977; 2. Slope of the land surface; 3. Location of wells and springs; 4. Depth to water table; 5. Availability of ground water; 6. Geohydrologic constraints on septic systems. Duigon, M.T. and Crowley, W.P., 1983. (Geologic map also available separately; see p. 8.) . . . . . \$16.00  
Without quadrangle geologic map . . . . . \$11.00

**QA 8. MOUNT VERNON AND PISCATAWAY QUADRANGLES: GEOLOGIC AND ENVIRONMENTAL ATLAS.** 3 maps: 1. Geologic; 2. Mineral resources and mined land inventory; 3. Geologic factors affecting land modification. Glaser, J.D. and Kuff, K.R., 1978. (Geologic map also available separately; see p. 8.) . . . . . \$7.00

**QA 9. HYDROGEOLOGIC ATLAS, WESTMINSTER QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Depth to the water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Otton, E.G. and Hilleary, J.T., 1979. (blue-line prints) (Geologic map also available; see p. 8.) . . . . \$10.00

**QA 10. HYDROGEOLOGIC ATLAS, WINFIELD QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to the water table; 3. Availability of

ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Otton, E.G. et al., 1980. (blue-line prints) ..... \$10.00

**QA 11. HYDROGEOLOGIC ATLAS, NEW WINDSOR QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to the water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Otton, E.G. et al., 1980. (blue-line prints) ..... \$10.00

**QA 12. HYDROGEOLOGIC ATLAS, HAMPSTEAD QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Location of wells, springs, and test holes; 3. Depth to the water table; 4. Availability of ground water; 5. Geohydrologic constraints on septic systems. Duigon, M.T., 1981. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 13. HYDROGEOLOGIC ATLAS, LINEBORO QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Location of wells, springs, and test holes; 3. Depth to the water table; 4. Availability of ground water; 5. Geohydrologic constraints on septic systems. Duigon, M.T., Otton, E.G., and Hilleary, J.T., 1981. .... \$11.00

**QA 14. HYDROGEOLOGIC ATLAS, LITTLESTOWN QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Locations of wells and springs. Weigle, J.M. and Hilleary, J.T., 1981. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 15. HYDROGEOLOGIC ATLAS, MANCHESTER QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to the water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Otton, E.G. et al., 1981. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 16. HYDROGEOLOGIC ATLAS, TANEYTOWN-EMMITSBURG QUADRANGLES, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Weigle, J.M. et al., 1983. .... \$13.00

**QA 17. HYDROGEOLOGIC ATLAS, UNION BRIDGE-WOODSBORO QUADRANGLES, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Locations of wells, springs, and test holes. Weigle, J.M. et al., 1981. (Geologic maps for these quadrangles are also available; see p. 8.) ..... \$13.00

**QA 18. HYDROGEOLOGIC ATLAS, HEREFORD QUADRANGLE, BALTIMORE COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Duigon, M.T. et al., 1981. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 19. HYDROGEOLOGIC ATLAS, FINKSBURG QUADRANGLE, CARROLL COUNTY, MARYLAND.** 5 maps: 1. Introduction and slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Constraints on installation of septic systems; 5. Location of wells, springs, and test holes. Williams, J.F. et al., 1981. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 20. HYDROGEOLOGIC ATLAS, NEW FREEDOM QUADRAN-**

**GLE, BALTIMORE COUNTY, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Location of wells and springs; 3. Depth to water table; 4. Availability of ground water; 5. Geohydrologic constraints on septic systems. Duigon, M.T., 1983. .... \$11.00

**QA 21. HYDROGEOLOGIC ATLAS, ELLICOTT CITY QUADRANGLE, BALTIMORE AND HOWARD COUNTIES, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Location of wells and springs; 3. Depth to water table; 4. Availability of ground water; 5. Geohydrologic constraints on septic systems. Duigon, M.T., 1983. (Geologic map also available; see p. 8.) ..... \$11.00

**QA 22. HYDROGEOLOGIC ATLAS, PHOENIX QUADRANGLE, BALTIMORE AND HARFORD COUNTIES, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Geohydrologic constraints on septic systems; 5. Location of wells and springs. Otton, E.G. et al., 1983. (Geologic map also available; see p. 8.) ..... Out of Print

**QA 23. HYDROGEOLOGIC ATLAS, NORRISVILLE QUADRANGLE, BALTIMORE AND HARFORD COUNTIES, MARYLAND.** 5 maps: 1. Slope of land surface; 2. Depth to water table; 3. Availability of ground water; 4. Geohydrologic constraints on septic systems; 5. Location of wells and springs. Otton, E.G. et al., 1983. .... \$11.00

**QA 24. HYDROGEOLOGIC ATLAS, SYKESVILLE QUADRANGLE, CARROLL AND HOWARD COUNTIES, MARYLAND.** 6 maps: 1. Slope of land surface; 2. Locations of wells and springs; 3. Depth to water table; 4. Availability of ground water; 5. Ground-water quality; 6. Geohydrologic constraints on septic systems. Available folded and limited rolled sets, which require mailing tube for mail orders. Duigon, M.T., 1994. .... \$11.00

**QA 25. HYDROGEOLOGIC ATLAS, WOODBINE AND DAMASCUS QUADRANGLES, CARROLL-FREDERICK-HOWARD-MONTGOMERY COUNTIES, MARYLAND.** 6 maps: 1. Slope of land surface; 2. Locations of wells and springs; 3. Depth to water table; 4. Availability of ground water; 5. Ground-water quality; 6. Geohydrologic constraints on septic systems. Available folded and limited rolled sets, which require mailing tube for mail orders. Duigon, M.T., 1994. .... \$11.00

**QA 26. HYDROGEOLOGIC ATLAS, CLARKSVILLE AND SANDY SPRING QUADRANGLES, HOWARD AND MONTGOMERY COUNTIES, MARYLAND.** 6 maps: 1. Slope of land surface; 2. Locations of wells and springs; 3. Depth to water table; 4. Availability of ground water; 5. Ground-water quality; 6. Geohydrologic constraints on septic systems. Available folded and limited rolled sets, which require mailing tubes for mail orders. Duigon, M.T., 1994. .... \$11.00

## QUADRANGLE GEOLOGIC MAPS

Scale 1:24,000 (1 inch equals 2,000 feet). Maps include explanatory text and cross sections. Refer to pp. 10-11 for quadrangle locations. In order to speed the dissemination of geologic mapping information,

## MAPS

new maps are released as bluelines only.

<b>ARTEMAS.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>AVILTON AND FROSTBURG.</b> Brezinski, D.K., 1988. . . . .	\$11.00
<b>BALTIMORE EAST.</b> Reinhardt, J. and Crowley, W.P., 1979. .....	\$6.00
<b>BALTIMORE WEST.</b> Crowley, W.P. and Reinhardt, J., 1979. .....	\$6.00
<b>BELLE GROVE.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>BOWIE.</b> Glaser, J.D., 1973. (Available only as part of Quad Atlas 1; see p. 6) . . . . .	—
<b>BRISTOL.</b> Glaser, J.D., 1984. . . . .	\$6.00
<b>CATOCTIN FURNACE AND BLUE RIDGE SUMMIT.</b> Fauth, J., 1977. . . . .	\$6.00
<b>COCKEYSVILLE.</b> Crowley, W.P., Reinhardt, J. and Cleaves, E.T., 1975. (Also available as part of Quadrangle Atlas 3; see p. 6) . . . . .	\$6.00
<b>CRESAPTOWN.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>CUMBERLAND.</b> Glaser, J.D. and Brezinski, D.K., 1994. (blueline only) . . . . .	\$3.00
<b>ELLCOTT CITY.</b> Crowley, W.P. and Reinhardt, J., 1980. . . . .	\$6.00
<b>FINKSBURG.</b> Muller, P.D., 1994. (blueline only) . . . . .	\$3.00
<b>FLINTSTONE.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>HAGERSTOWN.</b> Bell, S., 1993. (blueline only) . . . . .	\$3.00
<b>HAMPSTEAD.</b> Muller, P.D., 1991. . . . .	\$11.50
<b>HEREFORD.</b> Muller, P.D., 1985. . . . .	\$6.00
<b>LIBERTYTOWN.</b> Edwards, J., Jr., 1994. (blueline only) . . . . .	\$3.00
<b>LITTLESTOWN.</b> Edwards, J., Jr., 1993. (blueline only) . . . . .	\$3.00
<b>LONACONING.</b> Glaser, J.D. and Brezinski, D.K., 1998. (blueline only) . . . . .	\$3.00
<b>LOWER MARLBORO.</b> Glaser, J.D., 1984. . . . .	\$6.00
<b>MANCHESTER.</b> Edwards, J., Jr., 1993. (blueline only) . . . . .	\$3.00
<b>MIDDLE RIVER.</b> Reinhardt, J., 1977. . . . .	\$6.00
<b>MIDDLETOWN.</b> Fauth, J. and Brezinski, D.K., 1994. (blueline only) . . . . .	\$6.00
<b>MOUNT VERNON AND PISCATAWAY.</b> Glaser, J.D., 1978. (Also available as part of Quadrangle Atlas 8; see p. 6) . . . . .	\$6.00
<b>MYERSVILLE.</b> Fauth, J., 1982. . . . .	\$6.00
<b>OLDTOWN.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>PAW PAW.</b> Glaser, J.D., 1994. (blueline only) . . . . .	\$3.00
<b>PHOENIX.</b> Moller, S.A., 1979. . . . .	\$6.00

<b>PORT TOBACCO.</b> Glaser, J.D., 1984. . . . .	\$6.00
<b>REISTERSTOWN.</b> Crowley, W.P., 1977. (Also available as part of Quadrangle Atlas 7; see p. 6). . . . .	\$6.00
<b>SMITHSBURG.</b> Brezinski, D.K., 1993. (blueline only) . . . . .	\$3.00
<b>TOWSON.</b> Crowley, W.P. and Cleaves, E.T., 1974. (Available only as part of Quadrangle Atlas 2; see p. 6.) . . . . .	Out of Print
<b>UNION BRIDGE.</b> Edwards, J., Jr., 1986. . . . .	\$6.00
<b>UPPER MARLBORO.</b> Glaser, J.D., 1981. . . . .	\$6.00
<b>WESTMINSTER.</b> Edwards, J., Jr., 1993. (blueline only) . . . . .	\$3.00
<b>WHITE MARSH.</b> Crowley, W.P., Reinhardt, J., and Cleaves, E.T., 1976. (Also available as part of Quadrangle Atlas 4; see p. 6) . . . . .	\$6.00
<b>WOODSBORO.</b> Edwards, J., Jr., 1988. . . . .	\$6.00

## SHORELINE MAPS

### MAPS OF HISTORICAL SHORELINES AND EROSION RATES.

Includes data for 89 quadrangles covering Chesapeake Bay, Potomac River, and Atlantic shorelines; 2 maps per quadrangle. Scale 1:24,000. Conkwright, R.D., Jr., compiler, 1976. (blueline prints) ..... each map, \$3.00

**SHORELINE CHANGES MAPS.** Shoreline positions over time, displayed on 1988-1990 orthophoto quadrangles. Includes 91 quadrangles covering the Chesapeake Bay and the tidal reaches of Bay tributaries in Maryland. Scale 1:24,000. Kerhin, R.T., Hennessee, E.L., Isoldi, J.J., Gast, R.A. and Cuthbertson, R.H., compilers. 1994-1997. .... each map, \$7.50

## SLOPE MAPS

NOTE: When ordering, please specify whether you want rolled or folded map. Be sure to add \$2.00 for mailing tube for rolled maps.

**QUADRANGLE SLOPE MAPS.** Maps are available for the following quadrangles: Accident; Artemas; Avilton; Barton; Bittering; Cumberland; Davis, WV; Deer Park; Ellicott City; Evitts Creek; Finksburg; Flintstone; Friendsville; Frostburg; Gorman; Grantsville; Hampstead; Hereford; Kitzmiller; Lineboro; Littlestown; Lonaconing; Manchester; McHenry; Mount Storm, WV; New Freedom; New Windsor; Norrisville; Oakland; Phoenix; Reisterstown; Sang Run; Table Rock; Taneytown; Union Bridge; Westernport; Westminster; Winfield. Scale 1:24,000.

Available only as blueline prints. .... per copy, \$3.00

**BALTIMORE COUNTY SLOPE MAP.** Scale 1:62,500. 1974. .. \$3.00

## STATE MAPS

NOTE: Be sure to enclose \$2.00 for mailing tube when ordering rolled maps.

**MAP OF MARYLAND.** Scale 1:250,000 (1 inch to 4 miles). One sheet 63x35.5 inches. Shows counties, towns, roads, and streams, with gazetteer of place names. 1961. (Limited revision 1970) of Print

**MAP OF MARYLAND.** Scale 1:380,160 (1 inch to 6 miles). One sheet 44x26.5 inches. Shows counties, with gazetteer of cities, towns, etc. 1935. (folded or rolled) ..... \$2.00  
Edition with overprint showing election districts. 1953. (folded or rolled) ..... \$2.00

**MAP OF MARYLAND SHOWING SURFACE ELEVATIONS.** Scale 1:380,160 (1 inch to 6 miles). One sheet 44x26.5 inches. Elevation ranges shown in color. 1935. (folded or rolled) ..... \$2.00

**TOPOGRAPHIC MAP OF MARYLAND AND DELAWARE.** Scale 1:500,000 (1 inch to approximately 8 miles). Contour interval 200 feet on land; bathymetric contour interval 10 meters (approximately 33 feet). One sheet 36x22 inches. Prepared by U.S. Geological Survey. 1990. (folded or rolled) ..... \$5.00

**GEOLOGIC MAP OF MARYLAND.** Scale 1:380,160 (1 inch to 6 miles). One sheet 44x26.5 inches. 1933. (folded or rolled) .. \$3.00

**GEOLOGIC MAP OF MARYLAND.** Scale 1:250,000 (1 inch to 4 miles). One sheet 58x42 inches. 1968. .... Out of print  
NOTE: This map may be obtained as a special order as a blueline or as a photocopy. Contact the Publications Office for information.

**GENERALIZED GEOLOGIC MAP OF MARYLAND.** Scale approximately 1:1,500,000 (1 inch to 25 miles). One sheet 8.5x11 inches; in color. 1967. .... \$ .25

**POSTCARD GEOLOGIC MAP OF MARYLAND.** Scale approximately 1:3,000,000 (1 inch to 45 miles). Size 4.5x6 inches; in color. 1989. (This is a reduced version of the Generalized Geologic Map of Maryland, described above.) ..... \$ .25

## U.S. GEOLOGICAL SURVEY MAPS

Available from the Maryland Geological Survey

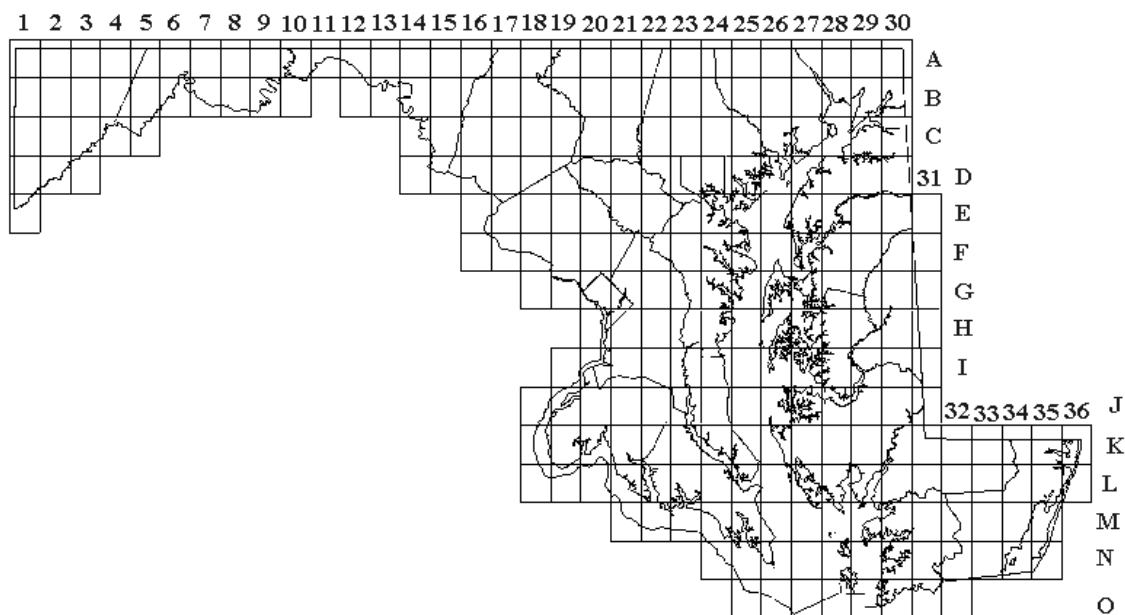
### Quadrangle Topographic Maps

These quadrangle topographic maps cover 7.5-minutes (or 1/8 degree) of latitude by 7.5-minutes of longitude and have a scale of 1:24,000 (1 inch equals 2,000 feet). Each map measures approximately 22x27 inches. A total of 257 quadrangle maps cover the land and water area of Maryland. A general index to these maps is shown on pp. 10-11.

Mail orders will be shipped **folded unless** order is accompanied by additional \$2.00 for a mailing tube.

The MGS keeps only a limited supply of USGS quadrangle topographic maps on hand. For large orders (more than 5 quadrangle maps total), or for other USGS maps not listed below, contact U.S. Geological Survey, Map Distribution, Federal Center, Bldg. 41, Box 25286, Denver, Colorado 80225. For more information concerning USGS map products, call toll-free 1-800-USA-MAPS or 1-800-MAP-HELP.

Price, per map ..... \$5.00



## INDEX TO 7.5-MINUTE QUADRANGLE TOPOGRAPHIC MAPS OF MARYLAND

The names of the 257 quadrangles are listed on the facing page. Example: G25 is the Annapolis quadrangle.

When ordering, please specify quadrangle name, not the number.

If you are interested in the map covering a specific site, you may not be able to identify the appropriate quadrangle with certainty on this index map. If you are not sure of the quad name, please contact the MGS Publications Office for assistance by calling 410-554-5500 or e-mailing [publications@mgs.md.gov](mailto:publications@mgs.md.gov). If you have access to the internet, [www.mapstore.com](http://www.mapstore.com) provides more detailed images of the area covered by any 7.5-minute quadrangle.

A1	Friendsville	A23	New Freedom	B16	Myersville	C16	Middletown
A2	Accident	A24	Norrisville	B17	Catoctin Furnace	C17	Frederick
A3	Grantsville	A25	Fawn Grove	B18	Woodsboro	C18	Walkersville
A4	Avilton	A26	Delta	B19	Union Bridge	C19	Libertytown
A5	Frostburg	A27	Conowingo Dam	B20	New Windsor	C20	Winfield
A6	Cumberland	A28	Rising Sun	B21	Westminster	C21	Finksburg
A7	Evitts Creek	A29	Bay View	B22	Hampstead	C22	Reisterstown
A8	Flintstone	A30	Newark West	B23	Hereford	C23	Cockeysville
A9	Artemas	B1	Sang Run	B24	Phoenix	C24	Towson
A10	Bellegrove	B2	McHenry	B25	Jarrettsville	C25	White Marsh
A11	Hancock	B3	Bittinger	B26	Bel Air	C26	Edgewood
A12	Cherry Run	B4	Barton	B27	Aberdeen	C27	Perryman
A13	Clear Spring	B5	Lonaconing	B28	Havre de Grace	C28	Spesutie
A14	Mason-Dixon	B6	Cresaptown	B29	North East	C29	Earleville
A15	Hagerstown	B7	Patterson Creek	B30	Elkton	C30	Cecilton
A16	Smithsburg	B8	Oldtown	C1	Oakland	D1	Table Rock
A17	Blue Ridge Summit	B9	Paw Paw	C2	Deer Park	D2	Gorman
A18	Emmitsburg	B10	Great Cacapon	C3	Kitzmiller	D3	Mount Storm
A19	Taneytown	B12	Big Pool	C4	Westernport	D14	Charles Town
A20	Littlestown	B13	Hedgesville	C5	Keyser	D15	Harpers Ferry
A21	Manchester	B14	Williamsport	C14	Shepherdstown	D16	Point of Rocks
A22	Lineboro	B15	Funkstown	C15	Keedysville	D17	Buckeystown

D18	Urbana	H29	Fowling Creek	M23	St Clements Island
D19	Damascus	H30	Hobbs	M24	Piney Point
D20	Woodbine	H31	Hickman	M25	St. Marys City
D21	Sykesville	I19	Fort Belvoir	M26	Point No Point
D22	Ellicott City	I20	Mount Vernon	M27	Richland Point
D23	Baltimore West	I21	Piscataway	M28	Bloodsworth Island
D24	Baltimore East	I22	Brandywine	M29	Deal Island
D25	Middle River	I23	Lower Marlboro	M30	Monie
D26	Gunpowder Neck	I24	North Beach	M31	Princess Anne
D27	Hanesville	I26	Tilghman	M32	Dividing Creek
D28	Betterton	I27	Oxford	M33	Snow Hill
D29	Galena	I28	Trappe	M34	Public Landing
D30	Millington	I29	Preston	M35	Tingles Island
E1	Davis	I30	Federalsburg	N24	Kinsale
E16	Waterford	I31	Seaford West	N25	St George Island
E17	Poolesville	J18	Quantico	N26	Point Lookout
E18	Germantown	J19	Indian Head	N27	East of Point Lookout
E19	Gaithersburg	J20	Port Tobacco	N28	Kedges Straits
E20	Sandy Spring	J21	La Plata	N29	Terrapin Sand Point
E21	Clarksville	J22	Hughesville	N30	Marion
E22	Savage	J23	Benedict	N31	Kingston
E23	Relay	J24	Prince Frederick	N32	Pocomoke City
E24	Curtis Bay	J26	Hudson	N33	Girdletree
E25	Sparrows Point	J27	Church Creek	N34	Boxiron
E26	Swan Point	J28	Cambridge	N35	Whittington Point
E27	Rock Hall	J29	East New Market	O25	Heathsville
E28	Chestertown	J30	Rhodesdale	O26	Burgess
E29	Church Hill	J31	Sharptown	O27	Smith Point
E30	Sudlersville	K18	Widewater	O28	Ewell
E31	Kenton	K19	Nanjemoy	O29	Great Fox Island
F16	Leesburg	K20	Mathias Point	O30	Crisfield
F17	Sterling	K21	Popes Creek	O31	Saxis
F18	Seneca	K22	Charlotte Hall	O32	Hallwood
F19	Rockville	K23	Mechanicsville		
F20	Kensington	K24	Broomes Island		
F21	Beltsville	K25	Cove Point		END OF LIST
F22	Laurel	K26	Taylors Island		
F23	Odenton	K27	Golden Hill		
F24	Round Bay	K28	Blackwater River		
F25	Gibson Island	K29	Chicamacomico River		
F26	Love Point	K30	Mardela Springs		
F27	Langford Creek	K31	Hebron		
F28	Centreville	K32	Delmar		
F29	Price	K33	Pittsville		
F30	Goldsboro	K34	Whaleysville		
F31	Marydel	K35	Selbyville		
G18	Vienna	K36	Assawoman Bay		
G19	Falls Church	L18	Passapatanzy		
G20	Washington West	L19	King George		
G21	Washington East	L20	Dahlgren		
G22	Lanham	L21	Colonial Beach North		
G23	Bowie	L22	Rock Point		
G24	South River	L23	Leonardtown		
G25	Annapolis	L24	Hollywood		
G26	Kent Island	L25	Solomons Island		
G27	Queenstown	L26	Barren Island		
G28	Wye Mills	L27	Honga		
G29	Ridgely	L28	Wingate		
G30	Denton	L29	Nanticoke		
G31	Burrsville	L30	Wetipquin		
H20	Alexandria	L31	Eden		
H21	Anacostia	L32	Salisbury		
H22	Upper Marlboro	L33	Wango		
H23	Bristol	L34	Ninepin Branch		
H24	Deale	L35	Berlin		
H26	Claiborne	L36	Ocean City		
H27	St Michaels	M21	Colonial Beach South		
H28	Easton	M22	Stratford Hall		

## U.S. GEOLOGICAL SURVEY MAPS (continued)

### Geophysical Investigations Maps

NOTE: There are more USGS Geophysical Investigations Maps covering parts of Maryland than those listed below. To inquire about other USGS maps or those listed as "out of stock," contact the USGS at the address or telephone printed on page 9.

**GP-482. AEROMAGNETIC MAP OF BEL AIR AND VICINITY, HARFORD, BALTIMORE, AND CECIL COUNTIES, MARYLAND.** Scale 1:62,500. Bromery, R.W., Petty, A.J., and Smith, C.W., 1964. . . . . Out of Stock

**GP-484. NATURAL GAMMA AERORADIOACTIVITY MAP OF BEL AIR AND VICINITY, HARFORD, BALTIMORE, AND CECIL COUNTIES, MARYLAND.** Scale 1:62,500. Bromery, R.W., Petty, A.J., and Gilbert, F.P., 1964. . . . . Out of Stock

**GP-755. AEROMAGNETIC MAP OF PART OF CECIL COUNTY, MARYLAND, AND PARTS OF ADJACENT COUNTIES IN MARYLAND AND DELAWARE.** Scale 1:62,500. 1971. . . . \$3.00

**GP-756. AEROMAGNETIC MAP OF PART OF KENT COUNTY, MARYLAND, AND PARTS OF ADJACENT COUNTIES IN MARYLAND AND DELAWARE.** Scale 1:62,500. 1971. . . . \$3.00

**GP-842. AEROMAGNETIC MAP OF CUMBERLAND AND VICINITY, MARYLAND, AND ADJACENT STATES.** Scale 1:250,000. 1972. . . . . \$3.00

**GP-898. AEROMAGNETIC MAP OF EASTERN DORCHESTER COUNTY, MARYLAND, AND PARTS OF ADJACENT COUNTIES.** Scale 1:62,500. 1974. . . . . \$3.00

**GP-899. AEROMAGNETIC MAP OF WESTERN DORCHESTER COUNTY, MARYLAND, AND PARTS OF ADJACENT COUNTIES.** Scale 1:62,500. 1974. . . . . \$3.00

**GP-900. AEROMAGNETIC MAP OF SOUTHERN QUEEN ANNE'S COUNTY, MARYLAND, AND PARTS OF ADJACENT COUNTIES.** Scale 1:62,500. 1974. . . . . \$3.00

**GP-923. AEROMAGNETIC MAP OF MARYLAND.** Scale 1:250,000. Zietz, I., Gilbert, F.P., and Kirby, Jr., J.R., 1978. \$3.00

## U.S. GEOLOGICAL SURVEY MAPS (continued)

### Miscellaneous U.S.G.S. Maps

**HA-365. WATER RESOURCES OF SOUTHERN MARYLAND.** Several maps plus text on 3 sheets. Weigle, J.M., Webb, W.E., and Gardner, R.A., 1970. . . . . \$8.00

**MF-1948-C. MAPS SHOWING QUATERNARY GEOLOGY OF THE SOUTHERN MARYLAND PART OF THE CHESAPEAKE BAY.** Scale 1:125,000. 3 sheets. Colman, S.M. and Halka, J.P., 1989. . . . . \$5.50

**MF-1948-D. MAPS SHOWING QUATERNARY GEOLOGY OF THE NORTHERN MARYLAND PART OF THE CHESAPEAKE BAY.** Scale 1:125,000. 3 sheets. Colman, S.M. and Halka, J.P., 1989. . . . . \$5.50

**TOPOGRAPHIC MAP OF MARYLAND AND DELAWARE.** Scale 1:500,000 (1 inch to approximately 8 miles). Contour interval 200 feet on land; bathymetric contour interval 10 meters (approximately 33 feet). One sheet 36×22 inches. Prepared by U.S. Geological Survey. 1990. . . . . \$5.00

### WETLANDS MAPS

NOTE: The following categories include numerous maps that cannot be listed separately. These maps cover the coastal and tidal areas of the State. Please contact the MGS Publications Office for detailed coverage available. The following descriptions should provide a general idea of the maps' content. All are available only as blueline copies; reproduction time will delay filling orders somewhat.

**MARYLAND TIDAL WETLANDS INVENTORY (TWI) MAPS.** Depicts the boundaries of the "Critical Area" and of wetlands on an aerial photographic base; scale 1:2,400 (1 inch equals 200 feet); size approximately 42 inches by 42 inches. Map sheets cover the following counties: Anne Arundel, Baltimore, Calvert, Caroline, Cecil, Charles, Dorchester, Harford, Kent, Prince George's, Queen Anne's, St. Mary's, Somerset, Talbot, Wicomico, and Worcester. Prepared by the Maryland Department of Natural Resources, Water Resources Administration, 1971. Blueline copies only. . . . . \$6.00

**NATIONAL WETLANDS INVENTORY (NWI) MAPS.** Depicts wetlands according to type and classification on a 7.5-minute quadrangle topographic base; scale 1:24,000 (1 inch equals 2,000 feet); size approximately 24 inches by 31 inches. Prepared by the U.S. Dept. of the Interior / Fish and Wildlife Service. Blueline copies only. . . . . \$6.00

**SUBMERGED AQUATIC VEGETATION (SAV) DISTRIBUTION - 1978.** A total of 77 maps depict the distribution of the various types of aquatic vegetation by genus and species on the 7.5-minute quadrangle topographic base; scale 1:24,000 (1 inch = 2,000 feet); size approximately 24 inches by 31 inches. Prepared by Earth Satellite Corp. under contract to American University, Washington, DC, for the Maryland Department of Natural Resources. Blueline copies only. . . . . \$6.00

## ARCHEOLOGICAL STUDIES

- A.S. 1. AN ARCHEOLOGICAL SEQUENCE IN THE MIDDLE CHESAPEAKE REGION.** 41 p., 15 figs., 8 tabs. Wright, H.T., 1973. .... \$3.00
- A.S. 2. BIBLIOGRAPHY OF MARYLAND ARCHEOLOGY.** 151 p., 2 figs. Brown, L.E. and Curry, D.C., 1981. .... \$5.00
- A.S. 3. BIBLIOGRAPHY OF MARYLAND ARCHEOLOGY, 1981-1984 SUPPLEMENT.** 70 p. Curry, D.C. and Brown, L.E., 1985. .... \$4.00
- A.S. 4. RADIOCARBON DATING OF ARCHEOLOGICAL SAMPLES FROM MARYLAND.** 44 p., 2 figs., 6 tabs. Boyce, H.L. and Frye, L.A., 1986. .... \$9.00

NOTE: In 1990, the Division of Archeology was transferred from the Maryland Geological Survey. For information concerning other archeology reports or Maryland archeology in general, contact: OMP Archeological Section, Historical & Cultural Programs, Department of Housing and Community Development, 100 Community Place, Crownsville, MD 21032 (phone 410 514-7665). Archeology inquiries related to highway projects should be directed to State Highway Administration, Project Planning Division, 707 N. Calvert St., Baltimore, MD 21202 - Attention: Archeology Group (phone 410 321-2213).

## BASIC DATA REPORTS

- BDR 1. RECORDS OF WELLS AND SPRINGS IN BALTIMORE COUNTY, MARYLAND.** 406 p., 1 pl., 1 fig., 4 tabs. Laughlin, C.P., 1966. (Available only on microfiche) .... \$5.00
- BDR 2. RECORDS OF WELLS AND SPRINGS, CHEMICAL ANALYSES, AND SELECTED WELL LOGS IN CHARLES COUNTY, MARYLAND.** 93 p., 1 pl., 4 tabs. Slaughter, T.H. and Laughlin, C.P., 1966. .... Out of Print
- BDR 3. HYDROGEOLOGIC DATA FROM THE JANES ISLAND STATE PARK TEST WELL (1,514 FEET), SOMERSET COUNTY, MARYLAND.** 24 p., 11 figs., 13 tabs. Hansen, H.J., 1967. .... \$3.50
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Note: Information in OFR 3 has been updated by OFR 8 (see below) and RI 49 (see p. 22 of this List of Publications). Although obsolete, the original data for OFR 3 are available for inspection at the Maryland Geological Survey.

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NOTE: Also see p. 25, U.S. Geological Survey reports, Water Resources Investigations.

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**RI 39. HYDROGEOLOGY OF THE UPPER CHESAPEAKE BAY AREA, MARYLAND, WITH EMPHASIS ON AQUIFERS IN THE POTOMAC GROUP.** 62 p., 19 figs., 11 tabs. Otton, E.G. and Mandle, R.J., 1984. . . . . \$12.00

**RI 40. THE COLUMBIA AQUIFER OF THE EASTERN SHORE OF MARYLAND. Part 1: Hydrogeology.** 34 p., 6 pls., 18 figs., 4 tabs. Bachman, L.J., 1984. **Part 2: Selected water-well records, chemical analyses, water-level measurements, lithologic logs, and geophysical logs.** 110 p., 9 pls., 21 figs., 5 tabs. Wilson, J.M., 1984. . . . . \$16.50

**RI 41. FIRST REPORT ON THE HYDROLOGIC EFFECTS OF UNDERGROUND COAL MINING IN SOUTHERN GARRETT COUNTY, MARYLAND.** 99 p., 34 figs., 13 tabs. Duigon, M.T. and Smigaj, M.J., 1985. . . . . \$7.75

**RI 41-A. HYDROLOGIC AND MINING DATA FROM AN AREA OF UNDERGROUND COAL MINING IN GARRETT COUNTY, MARYLAND.** 81 p., 16 figs., 2 tabs. Hiortdahl, S.N., 1988. \$9.00

**RI 42. MARYLAND SPRINGS—THEIR PHYSICAL, THERMAL, AND CHEMICAL CHARACTERISTICS.** 151 p., 16 figs., 16

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tabs. Otton, E.G. and Hilleary, J.T., 1985. .... \$12.25

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**RI 45. SIMULATION OF GROUND-WATER FLOW AND BASE FLOW IN WEATHERED CRYSTALLINE ROCK, UPPER CATTAIL CREEK, HOWARD COUNTY, MARYLAND.** 68 p., 50 figs., 8 tabs. Willey, R.E. and Achmad, G., 1986. .... \$9.50

**RI 46. EVALUATION OF THE WATER-SUPPLY POTENTIAL OF AQUIFERS IN THE POTOMAC GROUP OF ANNE ARUNDEL COUNTY, MARYLAND.** 111 p., 66 figs., 11 tabs. Mack, F.K. and Achmad, G., 1986. .... \$9.50

**RI 47. LORAN-C CALIBRATION IN CHESAPEAKE BAY.** 34 p., 7 figs., 4 tabs. Halka, J.P., 1987. .... \$3.50  
NOTE: The FORTRAN source code and executable program code for use on IBM-PC or compatibles is available at no additional charge. Send a formatted DS/DD 5.25" floppy disk to the author at the Maryland Geological Survey.

**RI 48. THE SURFICIAL SEDIMENTS OF CHESAPEAKE BAY, MARYLAND: PHYSICAL CHARACTERISTICS AND SEDIMENT BUDGET.** 82 p., 8 pls., 37 figs., 28 tabs. Kerhin, R.T. et al., 1988. .... \$15.00

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**RI 51. HYDROGEOLOGY, BRACKISH-WATER OCCURRENCE, AND SIMULATION OF FLOW AND BRACKISH-WATER MOVEMENT IN THE AQUIA AQUIFER IN THE KENT ISLAND AREA, MARYLAND.** 131 p., 63 figs., 11 tabs. Drummond, D.D., 1988. .... \$17.00

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**RI 58. HYDROGEOLOGY, WATER-SUPPLY POTENTIAL, AND WATER QUALITY OF THE COASTAL PLAIN AQUIFERS OF HARFORD COUNTY, MARYLAND.** 160 p., 87 figs., 24 tabs. Drummond, D.D. and Blomquist, J.D., 1993. .... \$25.00

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**RI 68. HYDROGEOLOGY, SIMULATION OF GROUND-WATER FLOW, AND GROUND-WATER QUALITY OF THE UPPER COASTAL PLAIN AQUIFERS IN KENT COUNTY, MARYLAND.**

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76 p., 62 figs., 8 tabs. Drummond, D.D., 1998. . . . . \$8.00

**RI 69. THE GEOHYDROLOGY AND WATER-SUPPLY POTENTIAL OF THE LOWER PATAPSCO AQUIFER AND PATUXENT AQUIFERS IN THE INDIAN HEAD-BRYANS ROAD AREA, CHARLES COUNTY, MARYLAND.** 119 p., 2 pls., 53 figs., 8 tabs, Andreasen, D.C., 1999. . . . . \$16.00

## SPECIAL PUBLICATIONS

NOTE: Series numbers were initiated in 1985, starting with Spec. Pub. No. 1. This listing also includes some non-Survey publications that are sold through the Maryland Geological Survey publications office.

**REPORT ON SURVEYS OF DELAWARE-MARYLAND BOUNDARIES.** 314 p., 10 figs., 6 tabs. Prepared by NOAA, the National Oceanic and Atmospheric Administration. Meade, B.K., 1982. . . . . \$12.00

**29TH ANNUAL HIGHWAY GEOLOGY SYMPOSIUM PROCEEDINGS.** 331 p. Ozol, M.A. and Weaver, K.N., eds., 1979. . . . \$5.50

**FIELD GUIDE TO NON-TIDAL WETLAND IDENTIFICATION.** 283 p., 12 figs., 11 tabs. Prepared by the U.S. Fish & Wildlife Service for the Maryland Department of Natural Resources. Tiner, R.W., Jr., 1988. . . . . Out of Print

**SP 1. FREDERICK-MONTGOMERY-HOWARD COUNTY BOUNDARY LINE RESURVEY OF 1980.** 97 p., 2 pls., 2 figs., 1 tab., 9 app. Schwarz, K.A., 1985. . . . . \$8.50

**SP 2. PROCEEDINGS, TWENTIETH FORUM ON THE GEOLOGY OF INDUSTRIAL MINERALS.** 152 p. Glaser, J.D. and Edwards, J., Jr., eds., 1985. . . . . \$5.00

**SP 3. STUDIES IN MARYLAND GEOLOGY — IN COMMEMORATION OF THE CENTENNIAL OF THE MARYLAND GEOLOGICAL SURVEY.** Part I, Historical Perspectives; Part II, Research Papers. 286 p. Brezinski, D.K. and Reger, J.P., eds., 1996. \$20.00

## REPORTS

### SYSTEMATIC REPORTS

NOTE: Reports include descriptions of rocks, their distribution, and their systematic paleontology and paleobotany.

**PLIOCENE AND PLEISTOCENE.** 291 p., 75 pls., 10 figs. Shattuck, G.B., Clark, W.B., Hollick, A., and Lucas, F.A., 1906. (Reprinted) ..... Out of Print

**MIOCENE. TEXT.** 509 p. Clark, W.B. et al., 1904. (Available only on microfiche) ..... \$5.00

**MIOCENE. PLATES.** 135 pls. 1904. (Available only on microfiche) ..... \$5.00

**EOCENE.** 331 p., 64 pls. Clark, W.B. et al., 1901. (Available only on microfiche) ..... \$5.00

**UPPER CRETACEOUS. TEXT AND PLATES.** 2 vols., 1022 p., 90 pls: Text: p. 1-578; Text (concluded) and Plates: p. 579-1022. Clark, W.B. et al., 1916. (Available only on microfiche) ..... \$9.00

**LOWER CRETACEOUS.** 622 p., 97 pls., 15 figs. Clark, W.B., Bibbins, A.B., Berry, E.W., and Lull, R.S., 1911. (Available only on microfiche) ..... \$5.00

**MIDDLE AND UPPER DEVONIAN.** 720 p., 6 pls., 2 figs. Prosser, C.S., Kindle, E.M., Swartz, C.K., and Clarke, J.M., 1913. (Available only on microfiche) ..... \$5.00

**LOWER DEVONIAN.** 560 p., 16 pls., 17 figs. Schuchert, C., Swartz, C.K., Maynard, T.P., and Rowe, R.B., 1913. (Available only on microfiche) ..... \$5.00

**DEVONIAN. PLATES.** Lower Devonian pls. XVII-XCVIII; Middle Devonian pls. VII-XLIV; Upper Devonian pls. XLV-LXII. 1913. (Available only on microfiche) ..... \$5.00

**SILURIAN.** 794 p., 67 pls., 27 figs. Swartz, C.K., Prouty, W.F., Ulrich, E.O., and Bassler, R.S., 1923. (Available only on microfiche) ..... \$5.00

**CAMBRIAN AND ORDOVICIAN.** 424 p., 58 pls., 27 figs. Bassler, R.S., 1919. (Available only on microfiche) ..... \$5.00

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**Vol. III.** Part 1: Introduction; Part 2: The relations of Maryland topography, climate and geology; Part 3: Highway legislation in Maryland; Part 4: The present condition of Maryland highways; Part 5: Construction and repair of roads; Part 6: Qualities of good road metal and methods of testing them; Part 7: The administration of roads; Part 8: The advantages of good roads; Appendix: Laws of Maryland relating to highways. 461 p., 35 pls., 38 figs. Clark, W.B.,

Sioussat, S.G.L., Johnson, A.N., and Reid, H.F., 1899. (Available only on microfiche) ..... \$5.00

**Vol. IV.** Part 1: The history of Maryland during Paleozoic time; Part 2: Second report on the highways of Maryland; Part 3: Report on the clays of Maryland. 524 p., 69 pls., 34 figs. Willis, B., Reid, H.F., Johnson, A.N., and Ries, H., 1902. (Available only on microfiche) ..... \$5.00

**Vol. V.** Part 1: Second report on magnetic work in Maryland; Part 2: Final report on the survey of the boundary line between Allegany and Garrett Counties; Part 3: Third report on the highways of Maryland; Part 4: Report on the coals of Maryland. 656 p., 35 pls., 55 figs. Bauer, L.A. et al., 1905. (Available only on microfiche) ..... \$5.00

**Vol. VI.** Part 1: The physical features of Maryland; Part 2: Exhibits of Maryland mineral resources; Part 3: Fourth report on the highways of Maryland; Part 4: First report on State highway construction; Part 5: The counties of Maryland, their origin, boundaries, and election districts. 578 p., 51 pls., 19 figs. Clark, W.B., Mathews, E.B., Johnson, A.N., and Crosby, W.W., 1906. (Available only on microfiche) ..... \$5.00

**Vol. VII.** Report of the resurvey of the Mason and Dixon Line. 412 p., 82 pls., 8 figs. Clark, W.B., Hodgkins, W.C., Mathews, E.B., and Burchard, E.L., 1908. (Available only on microfiche) ..... \$5.00

**Vol. VIII.** Part 1: Second report on State highway construction; Part 2: Maryland mineral industries; Part 3: Report on the limestones of Maryland. 486 p., 26 pls., 27 figs. Crosby, W.W., Clark, W.B., Mathews, E.B., and Grasty, J.S., 1909. (Available only on microfiche) ..... \$5.00

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**Vol. X.** Part 1: The geography of Maryland; Part 2: The surface and underground water resources of Maryland, including Delaware and the District of Columbia. 563 p., 96 figs. Clark, W.B., Mathews, E.B., and Berry, E.W., 1918. (Available only on microfiche) ..... \$5.00

**Vol. XI.** Part 1: Second report on the coals of Maryland; Part 2: The fire clays of Maryland. 549 p., 11 pls., 117 figs. Swartz, C.K., Baker, W.A., Watts, A.S., Schurecht, H.G., and Mathews, E.B., 1922. (Available only on microfiche) ..... \$5.00

**Vol. XII.** Part 1: The molding sands of Maryland; Part 2: Notes on feldspar, quartz, chrome, and manganese in Maryland; Part 3: The serpentines of Harford County; Part 4: The gabbros and associated rocks of Harford County; Appendix: Report on the location of the boundary line along the Potomac River between Virginia and Maryland. 336 p., 16 pls., 9 figs. Trainer, D.W., Jr., Singewald, J.T., Jr., Johanssen, A., and Insley, H., 1928. (Available only on microfiche) ..... \$5.00

**Vol. XIII.** Part 1: The application of recent structural methods in the interpretation of the crystalline rocks of Maryland; Part 2: Structure and age of the Port Deposit Granodiorite Complex; Part 3: The structure of the gneiss domes near Baltimore; Part 4: The structure and age of the volcanic complex of Cecil County; Part 5: Structure of the metamorphosed gabbro complex at Baltimore; Part 6: The Upper Cretaceous deposits of the Chesapeake and Delaware Canal of Maryland and Delaware. 295 p., 46 pls., 37 figs. Cloos, E., Hershey, H.G., Broedel, C.H., Marshall, J., Cohen, C.J., and Carter,

C.W., 1937. (Available only on microfiche) . . . . . \$5.00

**Vol. XIV.** Gazetteer of Maryland. 242 p., 1941. (Available only on microfiche) . . . . . \$5.00

**U.S. GEOLOGICAL SURVEY REPORTS**  
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**BULLETINS**

**BULL. 2123. GEOLOGY OF THE HARPERS FERRY QUADRANGLE, VIRGINIA, MARYLAND, AND WEST VIRGINIA.** 30 p., 1 pl. (1:24,000-scale geologic map), 26 figs., 3 tabs. Southworth, S. and Brezinski, D.K., 1996. . . . . \$5.00

**WATER-RESOURCES INVESTIGATIONS**

NOTE: Also see Open-File Reports, Hydrogeology, p. 18-19.

**WRI 80-18. GROUND WATER IN THE PIEDMONT UPLAND OF CENTRAL MARYLAND.** 42 p., 7 figs., 7 tabs. Richardson, C.A., 1980. (Superseded by Water-Supply Paper 2077, available from USGS, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425, Denver, Colorado 80225.) . . . . . Out of Print

**WRI 84-4322. NITRATE IN THE COLUMBIA AQUIFER, CENTRAL DELMARVA PENINSULA, MARYLAND.** 51 p., 4 pls., 12 figs., 11 tabs. Bachman, L.J., 1984. . . . . \$4.25

**WRI 86-4097. RECONNAISSANCE OF THE GROUND-WATER, SURFACE-WATER SYSTEM IN THE ZEKIAH SWAMP RUN BASIN, CHARLES AND PRINCE GEORGE'S COUNTIES, MARYLAND.** 54 p., 1 pl., 16 figs., 10 tabs. Hopkins, H.T., Fisher, G.T., and McGreevy, L.T., 1986. . . . . \$5.00

**WRI 87-4229. WATER LEVELS, CHLORIDE CONCENTRATIONS, AND PUMPAGE IN THE COASTAL AQUIFERS OF DELAWARE AND MARYLAND.** 106 p., 4 pls., 55 figs., 10 tabs. Phelan, D.J., 1987. . . . . \$4.00

**WRI 91-4179. WATER WITHDRAWAL AND USE IN MARYLAND, 1988-89.** 40 p., 7 figs., 13 tabs. Prepared in cooperation with the Maryland Water Resources Administration and the Maryland Geological Survey. Wheeler, J.C., 1992. . . . . \$5.00

**WRI 93-4225. WATER WITHDRAWAL AND USE IN MARYLAND, 1990-1991.** 48 p., 7 figs., 13 tabs. Wheeler, J.C., 1993. . . . . \$5.00

**WRI 94-4020. LOW-FLOW CHARACTERISTICS OF STREAMS IN MARYLAND AND DELAWARE.** 113 p., 10 pls., 6 figs., 12 tabs. Carpenter, D.H. and Hayes, D.C., 1996. . . . . \$13.50

**WRI 96-4314. WATER WITHDRAWAL AND USE IN MARYLAND, 1992-1993.** 21 p., 14 figs., 13 tabs. Wheeler, J.C., 1996. . . . . \$5.00

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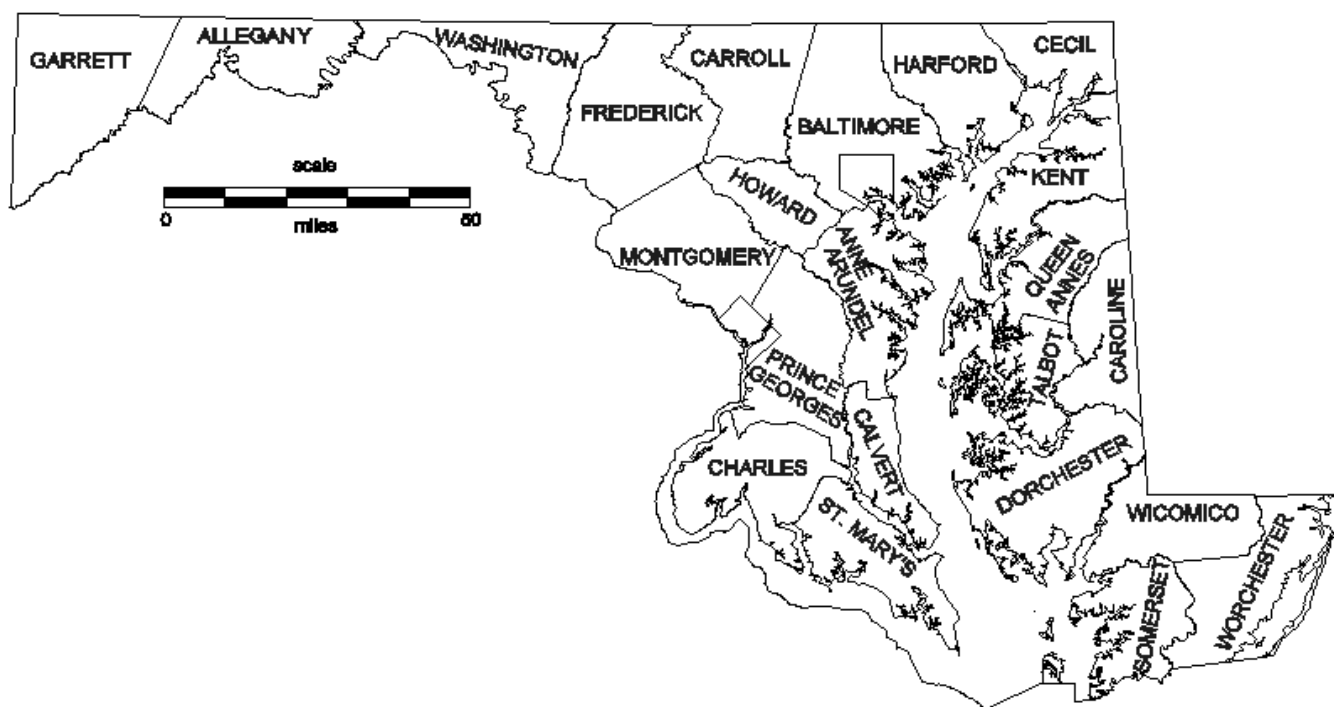
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